AMENDMENTS TO THE CLAIMS

23. (PREVIOUSLY PRESENTED) A radio for transmitting and receiving, via an antenna, of a plurality of high-frequency signals in a time-division-duplex mode on a single IC chip, the radio comprising:

a circuit path adapted to connect the antenna to a data output port and to a data input port, wherein the circuit path comprises:

(1) a bandpass filter for filtering signals derived from received high-frequency signals of the plurality of high-frequency signals;

(2) a discriminator for detecting a received data signal from a received filtered signal, wherein the received data signal is sent to the data output port;

(3) an up-conversion section for up-converting an information signal received from the data input port to a high-frequency signal of the plurality of high-frequency signals; and

(4) a shaping filter connected to an input of the up-conversion section;

wherein the circuit path comprising the bandpass filter, the discriminator, the up-conversion section, and the shaping filter is integrated into the single IC chip; and

wherein bandpass filtering operations are performed by components integrated into the single IC chip.

24. (PREVIOUSLY PRESENTED) The radio of claim 23, wherein the up-conversion section comprises a variable controlled oscillator.

25. (PREVIOUSLY PRESENTED) The radio of claim 23, wherein the up-conversion section comprises a directly modulated variable controlled oscillator.

26. (PREVIOUSLY PRESENTED) The radio of claim 23, wherein the radio comprises an image-rejection-mixer stage.

27. (PREVIOUSLY PRESENTED) The radio of claim 23, wherein the shaping filter comprises a Gaussian shaping filter.

28. (PREVIOUSLY PRESENTED) The radio of claim 23, further comprising a binary frequency shift keying modulation means.

29. (PREVIOUSLY PRESENTED) The radio of claim 23, further comprising automatic re-transmission request error correction means for data transfer.

30. (PREVIOUSLY PRESENTED) The radio of claim 23, further comprising continuous variable slope delta encoding means for voice transfer.

31. (PREVIOUSLY PRESENTED) The radio of claim 23, wherein the discriminator comprises a frequency modulation discriminator.

32. (PREVIOUSLY PRESENTED) The radio of claim 23, further comprising frequency hopping means for providing interference immunity.

33. (PREVIOUSLY PRESENTED) The radio of claim 23, further comprising: autotuning means for autotuning a plurality of filters and the discriminator; and wherein the discriminator comprises an FM discriminator.

34. (PREVIOUSLY PRESENTED) The radio of claim 23, further comprising a digital power-down control circuit to provide power-down control for the radio, wherein the power-down control circuit is integrated into the single IC chip.

35. (PREVIOUSLY PRESENTED) The radio of claim 23, further comprising a low-power oscillator integrated into the single IC chip.

36. (PREVIOUSLY PRESENTED) The radio of claim 23, wherein the signal derived from received high-frequency signals of the plurality of high-frequency signals is a low intermediate frequency signal.

37. (PREVIOUSLY PRESENTED) The radio of claim 23, wherein the circuit path further comprises a low-pass filter for filtering the received data signal output by the discriminator and the low-pass filter is connected to the discriminator and the data output port.

38. (PREVIOUSLY PRESENTED) The radio of claim 23, further comprising the antenna.

39. (PREVIOUSLY PRESENTED) A radio for transmitting and receiving, via an antenna, of a plurality of high-frequency signals in a time-division-duplex mode on a single IC chip, the radio comprising:

a circuit path adapted to connect the antenna to a data output port and to a data input port, wherein the circuit path comprises:

(1) a bandpass filter for filtering signals derived from received high-frequency signals of the plurality of high-frequency signals;

(2) a discriminator for detecting a received data signal from a received filtered signal, wherein the received data signal is sent to the data output port;

(3) an up-conversion section for up-converting an information signal received from the data input port to a high-frequency signal of the plurality of high-frequency signals;

(4) only one variable-controlled oscillator, wherein resonators are implemented for the variable-controlled oscillator without components external to the single IC chip; and

(5) a shaping filter connected to an input of the up-conversion section;

wherein the circuit path comprising the bandpass filter, the discriminator, the up-conversion section, the variable controlled oscillator, and the shaping filter is integrated into the single IC chip; and

wherein bandpass filtering operations are performed by components integrated into the single IC chip.

40. (PREVIOUSLY PRESENTED) The radio of claim 39, wherein bond-wire inductance is used to implement the resonators.

41. (PREVIOUSLY PRESENTED) The radio of claim 39, wherein the variable controlled oscillator is a directly modulated variable controlled oscillator.

42. (PREVIOUSLY PRESENTED) The radio of claim 39, wherein the radio comprises an image-rejection-mixer stage.

43. (PREVIOUSLY PRESENTED) The radio of claim 39, wherein the shaping filter comprises a Gaussian shaping filter.

44. (PREVIOUSLY PRESENTED) The radio of claim 39, further comprising a binary frequency shift keying modulation means.

45. (PREVIOUSLY PRESENTED) The radio of claim 39, further comprising automatic re-transmission request error correction means for data transfer.

46. (PREVIOUSLY PRESENTED) The radio of claim 39, further comprising continuous variable slope delta encoding means for voice transfer.

47. (PREVIOUSLY PRESENTED) The radio of claim 39, wherein the discriminator comprises a frequency modulation discriminator.

48. (PREVIOUSLY PRESENTED) The radio of claim 39, further comprising frequency hopping means for providing interference immunity.

49. (PREVIOUSLY PRESENTED) The radio of claim 39, further comprising: autotuning means for autotuning a plurality of filters and the discriminator; and wherein the discriminator comprises an FM discriminator.

50. (PREVIOUSLY PRESENTED) The radio of claim 39 further comprising a digital power-down control circuit to provide power-down control for the radio, wherein the power-down control circuit is integrated into the single IC chip.

51. (PREVIOUSLY PRESENTED) The radio of claim 39, further comprising a low-power oscillator integrated into the single IC chip.

52. (PREVIOUSLY PRESENTED) The radio of claim 39, wherein the signal derived from received high-frequency signals of the plurality of high-frequency signals is a low intermediate frequency signal.

53. (PREVIOUSLY PRESENTED) The radio of claim 39, wherein the circuit path further comprises a low-pass filter for filtering the received data signal output by the discriminator and the low-pass filter is connected to the discriminator and the data output port.

54. (PREVIOUSLY PRESENTED) The radio of claim 39, further comprising the antenna.

55-71. (CANCELED)

72. (PREVIOUSLY PRESENTED) A radio for transmitting and receiving a plurality of high-frequency signals in a time-division-duplex mode, the radio comprising:

an antenna for transmitting and receiving the plurality of high-frequency signals over an air interface;

a circuit path connecting the antenna to a data output port and to a data input port, wherein the circuit path comprises:

(1) a bandpass filter for filtering signals derived from received high-frequency signals of the plurality of high-frequency signals;

(2) a discriminator for detecting a received data signal from a received filtered signal, wherein the received data signal is sent to the data output port;

(3) an up-conversion circuit for up-converting a data signal received from the data input port to a high-frequency signal of the plurality of high-frequency signals; and

(4) a shaping filter connected to an input of the up-conversion section;

wherein the circuit path comprising the bandpass filter, the discriminator, the up-conversion section, the shaping filter, and the data input and output ports is integrated into a single IC chip; and

wherein bandpass filtering operations are performed by components integrated into the single IC chip.

73. (PREVIOUSLY PRESENTED) The radio of claim 72, wherein the circuit path comprises only one variable controlled oscillator integrated into the single IC chip.

74. (PREVIOUSLY PRESENTED) The radio of claim 73, wherein the variable controlled oscillator is a directly modulated variable controlled oscillator.

75. (PREVIOUSLY PRESENTED) The radio of claim 72, wherein the circuit path comprises an image rejection mixer circuit integrated into the single IC chip.

76. (PREVIOUSLY PRESENTED) The radio of claim 72, wherein the shaping filter comprises a Gaussian shaping filter.

77. (PREVIOUSLY PRESENTED) The radio of claim 72, wherein the data information signals are modulated by binary frequency shift keying prior to transmission thereof.

78. (PREVIOUSLY PRESENTED) The radio of claim 72, further comprising automatic re-transmission request error correction means for data transfer.

79. (PREVIOUSLY PRESENTED) The radio of claim 72, wherein the data information signals for voice transfer are encoded using continuous variable slope delta encoding prior to transmission thereof.

80. (PREVIOUSLY PRESENTED) The radio of claim 72, wherein the discriminator comprises a frequency modulation discriminator.

81. (PREVIOUSLY PRESENTED) The radio of claim 72, wherein the radio utilizes a frequency hopping scheme to provide interference immunity.

82. (PREVIOUSLY PRESENTED) The radio of claim 72, wherein the radio utilizes autotuning for a plurality of filters and an FM discriminator.

83. (PREVIOUSLY PRESENTED) The radio of claim 72, wherein the signal derived from received high-frequency signals of the plurality of high-frequency signals is a low intermediate frequency signal.

84. (PREVIOUSLY PRESENTED) The radio of claim 72, wherein the circuit path further comprises a low-pass filter integrated into the singe IC chip for filtering the received data signal output by the discriminator, wherein the low-pass filter is connected to the discriminator and the data output port.

85 – 126 (CANCELED)